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10# Polyethylene monomer

Strength Gain

2

4

MD Tear test-TAPPI T-414-units grams of force

CD Tear test-TAPPI T-414-units grams of force

### Summary of the Invention

The present invention relates to a new high strength poly one-side ream wrapper. The product is made by utilizing copolymer and/or terpolymer resins. The copolymer and terpolymer resins are made by combining butene, hexene, and/or octene with or propylene ethylene in the feed stocks being used to make the resin. It is an object of the present invention for the product to be produced by applying the copolymer or terpolymer to the paper surface or by blending the copolymer and/or terpolymer resins with low density polyethylene monomer resins before applying it to the paper surface. It is an object of the invention to produce the product of the present invention by co-extruding the low density polyethylene resin (monomer utilizing ethylene feed stock) with copolymer or terpolymer resins.

The present invention relates to a high strength poly one-side ream wrapper comprising paper and copolymer and/or terpolymer resins. The copolymer and/or terpolymer resins comprise butene, hexene, and/or octene with or propylene ethylene in feed stocks. The copolymer and/or terpolymer resins are applied to a surface of the paper. It is an object of the present invention for the paper to be additionally coated with low density polyethylene monomer resins. It is an object of the present invention for the low density polyethylene resin to be a monomer utilizing ethylene feed stock.

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Figure 8 illustrates the product formed by the process of Figure 7.

Figure 9 illustrates a process for forming a co-extruded poly coated paper with one layer of polyethylene monomer between two layers of copolymer and/or terpolymer resin.

Figure 10 illustrates the product formed by the process of Figure 9.

#### Detailed Description of the Invention

In an embodiment of the present invention, the low density polyethylene resin is a monomer utilizing ethylene feed stock. The copolymer and terpolymer resins are made by combining butene, hexene and/or octene feedstock with ethylene <sup>or propylene</sup> feedstock.

In one embodiment shown in Figure 1, the copolymer and terpolymer resins are applied to the paper surface. The copolymer and/or terpolymer 10 are fed into an extruder die 30 where it becomes extrudate 40. The extrudate 40 is coated on the paper 20 between the backing roll 50 and the chill roll 60 to form a poly coated paper with copolymer and/or terpolymer coating 70.

In a further embodiment shown in Figure 2, low-density monomer polyethylene resin 80 is mixed with copolymer and/or terpolymer resins 10 before or as being fed into an extruder die 30. The low-density polyethylene monomer and copolymer and/or terpolymer resin becomes extrudate 40. The extrudate 40 is applied to the paper surface 20 between the backing roll 50 and the chill roll 60. This creates a poly coated paper with polyethylene monomer and copolymer or terpolymer blended into the monomer 90.

In a further embodiment, shown in Figure 3, the copolymer and/or terpolymer layer 10 which may be blended with polyethylene monomer, is coextruded with a polyethylene monomer layer 80. The copolymer and/or terpolymer layer 10 and the polyethylene monomer layer 80 are fed through a coextruder die 130 to form coextrudate

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### Claims

1. A high strength poly one-side ream wrapper comprising;

paper;

copolymer and/or terpolymer resins;

said copolymer and/or terpolymer resins comprising butene, hexene, and/or octene with

propylene or ethylene in feed stocks;

said copolymer and/or terpolymer resins being applied to a surface of said paper.

2. The product of claim 1 further comprising;

low density polyethylene monomer resins.

3. A method for producing a high strength poly one side ream wrapper comprising;

co-extruding a low density polyethylene resin with copolymer or terpolymer resins onto a paper surface.

4. The method of claim 3 wherein the low density polyethylene resin is a monomer utilizing ethylene feed stock.

5. The method of claim 3 wherein the copolymer and terpolymer resins are made by combining butene, hexene and/or octene feedstock with ethylene/or propylene feedstock.

6. A method for producing a high strength poly one side ream wrapper comprising;

feeding a copolymer and/or terpolymer into an extruder die creating an extrudate;

coating a paper surface with said extrudate between a backing roll and a chill roll

forming a poly coated paper with said copolymer and/or terpolymer coating.

7. A method for producing a high strength poly one side ream wrapper comprising;

blending a low-density monomer polyethylene resin with a copolymer and/or terpolymer resin;

feeding said mixture into an extruder die;

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